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ABSTRACT

Through an integration of teacher effectiveness and reading research, this paper proposes ways for improving classroom reading instruction. The first part of the paper reviews teacher effectiveness research, noting the shifts that have occurred in that area from the early efforts, which focused on identifying and describing teacher characteristics associated with high or low student outcomes, to more recent efforts that have looked at teachers' goals, judgments, and decision making processes. The second section discusses the idea of "bounded rationality," which posits that because they work in a complex environment and must make decisions immediately, teachers have to construct a simplified model of a real situation and behave according to that model. The third section looks at research relative to teacher thought, judgment, and decision making, concentrating on the cognitive model proposed by R. Shavelson and P. Stern. The fourth section considers research covering decision making during reading instruction, specifically in the areas of teacher planning, classroom practice, and teacher concepts of reading. The final section describes the Concerns-Based Adoption Model--developed at the University of Texas and built on assumptions about school characteristics, adults as learners, and the change process--and discusses the implications of this model for classroom instruction. (FL)

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PROBLEMS OF CHANGE: BOUNDED RATIONALITY

WHAT DO TEACHERS REALLY DO?

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PROBLEMS OF CHANGE: BOUNDED RATIONALITY

WHAT DO TEACHERS REALLY DO?

The improvement of instructional practices has been a concern of American education for many years. Based on the assumption that "knowing what accounts for effective teaching constitutes knowledge of how to produce more effective teachers" (Fenstermacher, 1979, p. 160), the research focus has been on the identification and description of effective classroom teachers. The recent plethora of studies, utilizing significantly different research approaches than the traditional educational research designs, has been termed a "revolution" focused on the teaching process by Duffy (Note 1). He suggested a second revolution within the area of reading research. Both of these research foci appear to "have great potential for improving reading instruction in schools" (Duffy, Note 1, pp. 1-2). The purpose of this paper is to integrate the research knowledge from these two areas and to suggest implications and strategies for improving classroom reading instruction. However, background in teaching effectiveness research is reviewed briefly before a discussion of reading research and suggestions for instructional improvement.

Teacher Effectiveness Research

Historically studies focused on identifying those teacher characteristics which were correlated with high versus low student outcomes, what Gage has termed a criterion-of-effectiveness paradigm (Gage, 1963; cited in Borko, Shavelson, & Stern, 1981, p. 450). A shift occurred to that of the teaching process paradigm, mainly because contradictory and insignificant results were yielded from the previous type of studies. This focus on correlating teacher behaviors with student achievement has yielded results that were somewhat more consistent and meaningful than the previous

paradigm, yet our understanding of the teaching/learning process remained inadequate for theoretical or practical purposes.

One reason for the lack of clarity, raised by Lanier and Shulman (Note 2), is that the focus was too behavioristic rather than cognitive. In the same vein, Borko, Shavelson, & Stern (1981) suggested that perhaps this "small return" was the effect of dealing with the teacher

> as a 'black box'; the paradigm does not take into account teachers' goals, motives, knowledge, plans, decisions . . . . processes [which] should be considered as part of the domain of teaching and should have an effect on what researchers in the teaching process paradigm observe and count as teaching acts. (p. 451)

Another factor which possibly has contributed to our lack of understanding is that of aggregation of data. Rosenshine (1970) raised the issue regarding the question of considering a curriculum or a group of teachers as a homogenous treatment variable. He suggested that the teachers appeared to "vary widely in what activities they select [from the curriculum] and how they implement them" (Rosenshine, 1970, p. 280). Analyses which aggregate or combine the teachers into groups obscure these differences among the teachers and hence our understanding of why and on what bases teachers do what they do in classrooms.

Thus, the overall effect of the process studies was to broaden our knowledge of aspects related to teacher effectiveness (for a summary of the research see Duffy, Note 1). Nevertheless, because of the criticisms raised, there has been a recent shift in research on teaching to a focus upon a decision-making paradigm, that is the consideration of teachers' intentions, goals, judgments, and decisions (Borko, Shavelson, & Stern,

1981). This shift was based on the assumption that the teacher is a professional actively involved in the teaching act, rather than a somewhat "mechanistic" technician who transmits information (teaches) thoughtlessly.

Early research on instructional information processing and decision making yielded results that suggested "teaching is so complex that teachers must limit the amount of information they process and that, in fact, the demands of the workplace prevent them from making significant decisions during the interactive phase of teaching" (Duffy, Note 1). Because these results are contradictory to what would be predicted from the cognitive approach, studies began to investigate why teachers appeared to be less reflective than was predicted.

Bounded Rationality

Shavelson and Stern (1981), in reviewing research on teachers' pedagogical thoughts, judgments, and decisions over the past 10 years, posed two fundamental assumptions that underlie the research on teachers' thought processes:

1) Teachers are rational professionals who, like other professionals such as physicians, make judgments and carry out decisions in an uncertain, complex environment, and
2) Teachers' behaviors are guided by their thoughts, judgments, and decisions (pp. 456-57).

Because teaching occurs in a complex, uncertain environment and decisions must typically be made immediately rather than on a considered basis, the ideal condition of rational processing of information is not possible. A second factor complicates the assumption of teacher as rational decision yaker; the limits on the information processing capabilities of humans in the formulation of and solution of the complicated problems that evolve

during the instructional process (Shavelson & Stern, 1981; Shulman & Elstein, 1975). Because an individual has a limit on the degree of complexity with which he/she can deal, a teacher "constructs a simplified model of the real situation . . . . then, behaves rationally with respect to the simplified model of reality constructed" (Shavelson & Stern, 1981, p. 456). Hence the concept of bounded rationality has been proposed to help explain the complex phenomenon termed teaching (Shavelson & Stern, 1981; Shulman, Note 3).

Therefore developing an understanding of how thoughts and intentions are translated into actions has required changing the focus of the research efforts to that of examining the relationships between cognition and behavior. The nature of these research problems has resulted in a major shift in the designs and methodologies utilized to study teachers and teaching. Some of these approaches recently applied in education include policy capturing, lens modeling, process tracing, stimulated recall, case simulation, ethnography, and other naturalistic approaches. While the intent of this paper is not to describe these techniques as that information is available elsewhere (see Shavelson & Stern, 1981, for a summary), I would suggest that, because of the basic assumptions of qualitative research, the adaptation of these qualitative research techniques to the study of teachers and teaching has been appropriate. The assumptions of qualitative research methodology incude: a) the view that the behavior of an individual is based on his/her meaning structure (Wilson, 1977) and the social-cultural context in which it occurs; and b) the development of an inner understanding of an individual will engender much greater understanding of human behavior than studying the surface behaviors (e.g., standardized tests and interviews) (Rist, 1979). If we

are to understand the process of "teaching, [then] teachers' goals, judgments, and decisions must be understood, especially in relation to teachers' behavior and the classroom context" (Shavelson & Stern, 1981, p. 459). Methodologically rigorous qualitative research techniques are available and when used appropriately can provide valuable information relative to the classroom environmental context as well as to the development of conceptual and categorical systems that are data based.

Teacher Thought, Judgment, and Decisions

A graphic overview of the research relative to teacher thought, judgment, and decisions developed by Shavelson and Stern (1981, p. 461) is shown in Figure 1. They summarized the research on the kinds of information that teachers integrate in the the decision-making process into three factors: information relative to students, subject matter, and classrooms and school environment. The sequential nature of the information processing is evident by the circular flow of the figure, with the fact that consequent behavior will generally have an effect on the conditions on which future decisions are based. A major assumption of this figure again is the concept of bounded rationality, "the ability of teachers, and people in general, to process all of the information in their environment is limited . . . . [and] this active processing goes on in a very limited capacity, short-term memory" (Shavelson & Stern, pp. 460-61). They also suggested that the predictability of an environment can lead to chunking of information, thereby increasing the processing capacity. Perception and interpretation of information is selective relative to the goals of an individual who then constructs a simplified model of reality. He/she makes decisions and carries them out on the basis of the simplified

model (Newell & Simon, 1972; Nisbett & Ross, 1980; Shavelson & Stern, 1981; Simon & Newell, 1971).

> In order to understand the behaviors of teachers, then, it is essential to know (a) their goals, (b) the nature of the taskenvironment confronting them, (c) their information processingcapabilities, and (d) the relationship between these elements.(Shavelson & Stern, 1981, p. 461)

It also seems apparent that an individual should be the unit of study in that personal variation within each of the four factors will have an effect on the "picture" yielded.

A cognitive model of teachers' judgments and pedagogical decisions (c.f. Shavelson 1973, 1976), was also discussed by Shavelson and Stern (1981, p. 472). The model (see Figure 2.) is predicated on the assumption that "teaching is a process by which teachers make reasonable judgments and decisions with the intent of optimizing student outcomes" (p. 471). They suggested that teachers, using a few heuristics and attributions for the causes of events, select and integrate information in the decision making process. One criticism of the model had been raised, however, that the data which support this teacher decision-making model come from what has been termed "empty classroom" findings (Duffy, 1982). Duffy stated that "studies of classroom practice . . . . suggest quite a different picture, particularly as related to the teaching of reading" (1982, p. 295).

Decision-Making During Reading Instruction

In support of his position that "full classroom" research studies do not yield results consistent with the "rational" model of decision making, Duffy (1982) summarized three categories of studies conducted in the

context of real classrooms.The categories included research on a) teacher planning, b) classroom practice, and c) teacher conceptions of reading.

Teacher planning. Duffy stated that the planning studies, while not necessarily contradictory with the decision-making model in grouping for instruction (i.e., rationally based), indicated that teachers apparently planned for reading instruction based on their perception of activity flow. The focus was on what came next in the text and whether the activity could be implemented smoothly in the classroom.

Classroom practice. In summarizing several studies of classroom observation (Duffy & McIntyre, 1980; Dunkin & Biddle, 1974; Durkin, 1978-79; Mehan, 1979), Duffy stated that teachers were mainly engaged in monitoring and guiding activities. "To the extent that interactive decisions are made, they seem to be associated more with management than with instruction" (Duffy, 1982, p. 297). Management and organization concerns and the basal text appear to be the contributing factors to reading instructional decision.

Teacher conceptions of reading. While many researchers have supported the position that a teacher's conception of the process of reading is a major basis for decision making (Cunningham, 1977; Harste & Burke, 1977; Kamil & Pearson, 1979), studies conducted by Duffy and his colleagues (Bawden, Buike, & Duffy, 1979; Buike, Burke, & Duffy, Note 4, Duffy, Note 5) did not yield results that the teachers' conceptions of reading "triggered" the instructional decisions in the "full classroom", but that "teachers do have conceptions of reading when 'teaching in the empty classroom'" (Duffy, 1982, p. 298). He suggested that preactive teaching studies, (e.g., empty classroom) studies and interactive teaching studies (e.g., full classroom) yield different results possibly because actual

classrooms contain greater complexities for teachers than do simulations and cued stimulation situations.

Because our understanding of the nature and degree of complexity in classrooms and of the relationship between teacher thinking and instructional decisions is so "embryonic", research directed toward understanding what and why teachers behave as they do must occur within the framework in which the teachers operate. Duffy concluded:

> Since such "empty classroom" data provide only partial answers at best and may even lead us astray by creating an illusion that a particular type of decision-making occurs when studies of practice reveal otherwise, the ultimate test of our instructional models must include the concept of "full classroom." (1982, p.299)

If naturalistic research reports do not yield the same results as do laboratory simulations, then it seems imperative that the major focus in explanatory research must be within classrooms during instruction.

A Model for Change

It is well documented in the literature that creating change is at best difficult. Over the past 10 years, research on the change process has been one focus of the University of Texas R&D Center at Austin. The model developed, the Concerns-Based Adoption Model (CBAM, see Figure 3) (Hall, Wallace, & Dossett, 1973) was based on several basic assumptions about characteristics of schools, adults as learners, and the change process itself. These include:

1). Change is a process, not an event;

2). The understanding of the change process in organizations

requires an understanding of what happens to individuals as they are involved in change;

3). For the individual, change is a highly personal experience;

4). For the individual, change entails developmental growth in terms of feelings about and skill in using the innovation;

5). Information about the change process collected on an ongoing basis can be used to facilitate the management and implementation of the change process. (Heck, Stiegelbauer, Hall, & Loucks, 1981 pp. 7-8).

Critical components in the model include the concept of Stages of Concern about the Innovation (SoC) (Hall & Rutherford, 1976), Levels of Use of the Innovation (LoU) (Hall, Loucks, Rutherford, & Newlove, 1975), Innovation Configurations (IC) (Hall & Loucks, 1978), and the Intervention Taxonomy (IT) (Hall, Zigarmi, & Hord, 1979). The facilitator of the change process works systematically and continuously with the individuals over time to produce the desired outcomes. Because of the underlying assumptions and tod components of this model, it seems most adaptable to a cognitive-developmental approach to the improvement of teaching.

The emphasis is on the individual within the setting where he/she is "practicing" and on gaining information relative to the beliefs and concerns held, the materials, behaviors, and processes and strategies used. In addition the model focuses upon the "full Classroom", observing when the innovation is in use.

Certain problems may appear with the usage of this model in the change process for teachers. One major difficulty is that of the definition of the "innovation". Several authors have dealt with the problem of defining the term reading (Duffy & Roehler, 1982a; Durkin, 1978-79). However,

another problem of definition was raised by Duffy and Roehler (1982a, 1982b). They suggested that a problem exists in the definition of the term instruction as well. A careful definition of the "innovation" is required if the CBAM model is to be applied in a situation. If the innovation is to be defined as reading instruction, then both of these terms will have to be operationally defined if the intervention is to be successful.

Another concern relative to the appropriate implementation of the CBAM model is that of training in the use of the instruments and techniques from the model. The facilitator must either have the knowledge him/herself or work closely with an individual who does.

A final problem relates to the issue of time. Clearly if the change process is to be successfully implemented, then the individuals concerned will have to be willing to establish a time frame for the change. typically inservice is conducted on a one-shot basis or at least over a short period of time. The assumptions of the CBAM model indicate that a much longer period of time is required if the "innovation" is to be adopted as desired.

Research on reading teachers' decision-making processes and strategies within a "full" classroom appears to have the greatest potential for leading the the development of a clear understanding of what and why teachers are effective. Tools such as the CBAM have potential for not only the research process but also the intervention process within schools.

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FIGURE 1. Overview of the domain of research on teachers' judgments, decisions, and behavior.

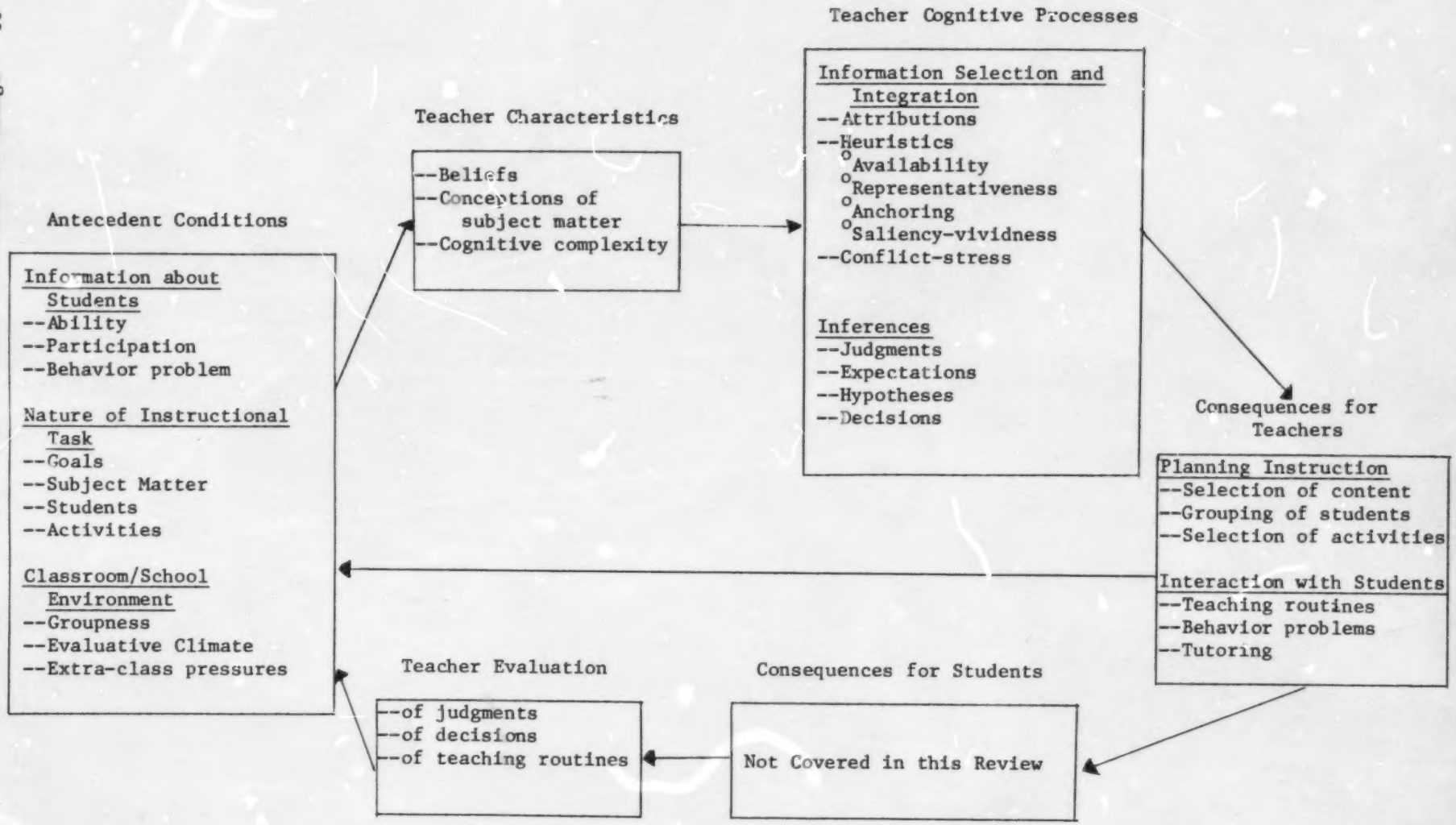

FIGURE 2. Some factors contributing to teachers' pedagogical judgments and decisions (after Shavelson, 1979; Shavelson, Atwood, & Borko, 1977).

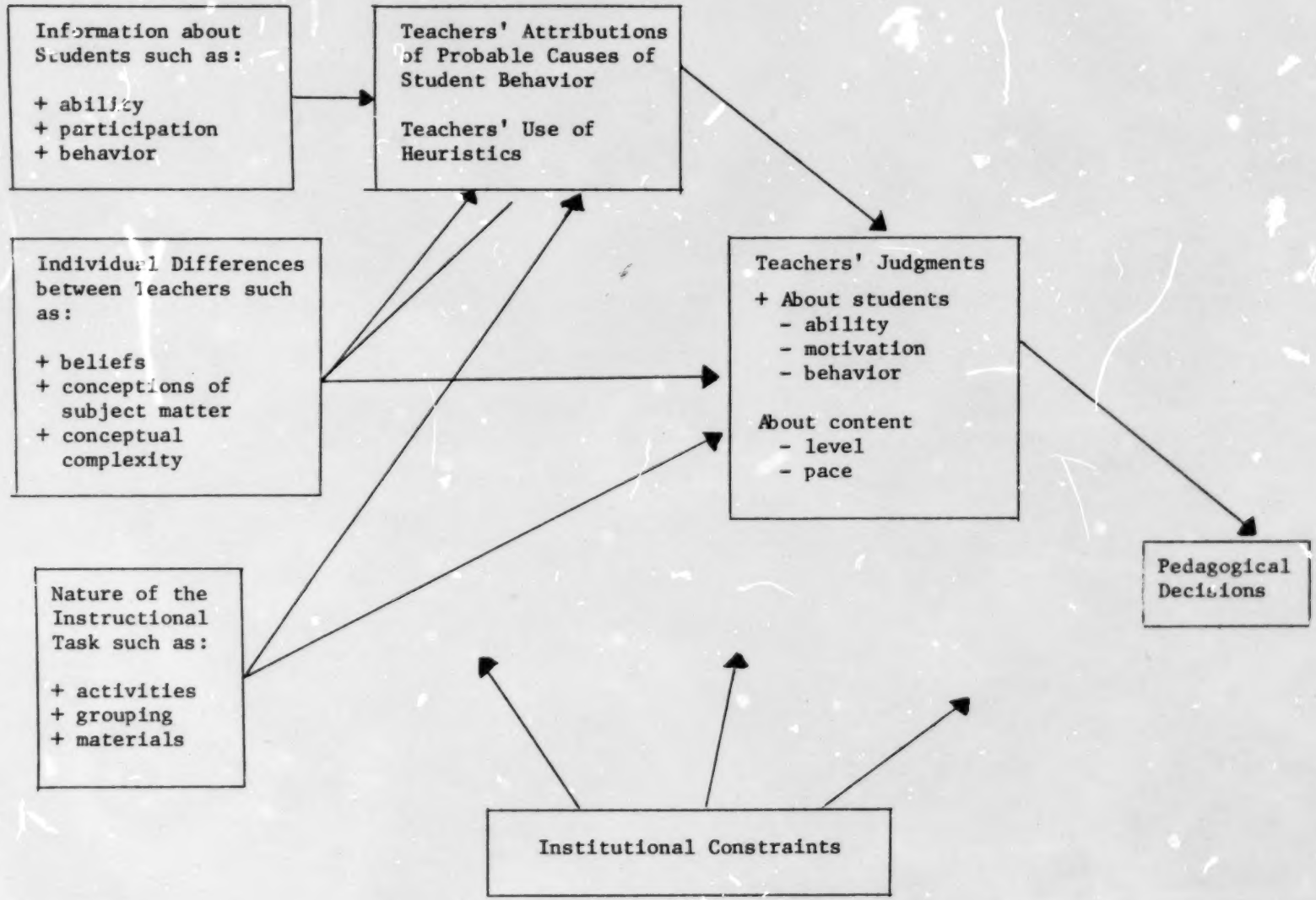

FIGURE 3

THE CONCERNS-BASED ADOPTION MODEL